

# Nuclear Division News



A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 8, No. 6/March 17, 1977

The inset at right shows a one-to-one correspondence between peaks and tissue interfaces in the reflection screen.



Ron Goans, ORNL Health Physics Division, demonstrates how physicians would examine pulse ultra-sonic reflections on an oscilloscope display (resembling a TV screen) to determine whether a burn is second or third degree. Interpretation of the reflected pulses requires a knowledge of cross-sectional anatomy, as well as practice.

## Cold weather brought production cut-backs, employee headaches

Cold weather and ensuing natural gas curtailments plus heavy snow storms and electric power supply shortages this winter resulted in production cutbacks at Union Carbide plants, shipment delays, and additional costs for fuel switching and developing alternate distribution routes for raw materials and products due to frozen rivers and roads. The Corporation, however, has experienced no significant loss of sales.

Natural gas shortages affected Carbon Products, Linde and Metals operations, particularly in Ohio and other North Central states, causing production cutbacks and temporary layoffs. Less than 350 people were affected. The most significant layoff occurred at the Fostoria, Ohio Carbon Products plant where natural gas curtailments necessitated the layoff of 201 employees. The Ashtabula, Ohio Metals plant had to lay off 128 employees due to the cutback of electric power supplies. Those employees have now been recalled. Full natural gas service has been restored to the Linde Lake-side and Ashtabula facilities. The Gulf

Coast plants, primarily Chemicals and Plastics, cut back on their use of natural gas, but employed alternate fuel oil firing capability to maintain production.

A number of years ago, Union Carbide recognized the certainty of natural gas shortages to industry and took action to insure minimal dependence upon natural gas as a fuel source. During the past four years, the Corporation has reduced significantly its use of natural gas by providing plants with alternate oil firing capability where feasible. As a result of this alternate capability, the effects of the severe winter on operations have been related largely to adverse weather conditions rather than to the natural gas shortage. Due to snow and frozen roads and rivers, truck, rail, and barge movements in the East and Midwest were delayed, and increased distribution costs were incurred. Because the Buffalo, New York, area was particularly hard hit with snow, severe delays in truck shipments were experienced, and the area was

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## New burn depth measurement developed by Lab scientists

A new technique which can measure within minutes the extent of tissue damage caused by thermal and electrical burns has been demonstrated by ORNL scientists.

With current methods of treatment, several weeks may elapse before physicians can distinguish between second and third degree burns. This delay in treatment increases the probability of infection, scarring and deformities which limit joint movements.

Experiments by researchers in the medical physics program of ORNL's Health Physics Division use an ultrasonic pulse-echo method to measure tissue damage in severe burns. The ultrasonic pulses are short bursts of high-frequency sound, less than one-millionth of a second in duration, that are transmitted through the wound area. By examining the reflections of the pulses from each layer of skin tissue, scientists can determine whether the burn is second or third degree.

Early determination of burn depth should allow for earlier and more effective skin grafts, thereby decreasing patient mortality, the length and costs of hospitalization, and surgeon work loads. More than two million Americans receive burns each year; approximately 70,000 require hospitalization, and some 10,000 die.

### Not new to medicine

Ultrasonic pulse systems are not new to medicine. They have been used in gynecology, cardiology, neurology and dentistry for several years.

In order to analyze tissue damage from burns, ORNL researchers developed a system which could measure extremely small distances through layers of soft-skin tissue. This was accomplished by slightly increasing the frequency of ultrasonic pulses, and using very highly damped, broad-banded transducers. The higher frequency enables the detection of minute tissue interfaces.

The new technique was developed in cooperation with the University of Tennessee Comparative Animal Research Laboratory (UT-CARL) in Oak Ridge where successful tests of the system with animals were conducted before clinical trials on humans. Additional testing is under way at the Norton Children's Hospital Burn Unit in Louisville, Ky., to determine whether this technique is applicable to human burns. Development is continuing to extend the pulse-echo technique, which now examines small areas of skin, to a scanning system which covers larger areas.

### Principal developers

Principal developers of the ultrasonic pulse-echo system for determining burn depth are Ronald E. Goans, ORNL Health Physics Division; John H. Cantrell Jr., consultant from the University of Tennessee, Knoxville; Harry D. Stambaugh, M.D., a burn surgeon from Louisville, Ky.; Wendell J. Kopp and Morris V. Schneider, UT-CARL; F. Bradford Meyers, ORNL cooperative education program student from Vanderbilt University; and Roberta L. Roswell, graduate student from Rensselaer Polytechnic Institute.

### In this issue . . .

What is that man doing? The latest in "the different drummer" series centers around Robert L. McIlwain, who is a rock-hound, or was, until he became a lapidary . . . a stone cutter and polisher. His story is found on page 2.

### Other features:

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*'A Different Drummer'*

## Rock-hounding, lapidary soon becomes McIlwaine family affair

*Editor's Note: Robert L. McIlwain, a machine tool specialist in Y-12's Fabrication Division, came up with the latest in the "Different Drummer" series. He is a rock-hound, or a lapidary. He and his wife, Bernice, live at 112 Parma Road, Oak Ridge. They have two married sons, Robert L. Jr. and William A. Even the grandchildren enjoy the rock-finishing, but let McIlwain tell his own story.*



By Robert L. McIlwain

How did the McIlwains get into rock hunting as a hobby? Well, after getting the boys educated, we decided we needed a hobby which we could pursue together and "rock-hounds" we became.

My wife and I have always been interested in looking at the different kinds of rocks and jewelry you find in rock or lapidary shops, and we had heard of the ruby and sapphire mines in Franklin, N.C. Decided to try our luck.

We went to the Franklin mines and had very good beginner's luck. We found some rubies and sapphires and this got into our blood. I guess you could say we got deeper and deeper involved and finally got into rock cutting.

**Into remote areas**

The thing about hunting rocks is that you get away from everyday things, as you choose out-of-the-way locations in remote areas, and you tend to forget whatever problems you may have at the moment. This tends to be relaxing, but can also be exhausting since you have to work hard to get to some of these places, carrying your tools, and walking back with your "finds." In most places you have to dig and pan for stones after you arrive, then hike back, of course.

One of the best hunting trips we ever had was out from Canton, N.C.

While Bernice was out looking around the edge of the mountain and in the creek, I decided to dig. So I found a place and started digging in, and ran into several clusters of gray and blue sapphires . . . some very good stones. A find like this makes up for the many times you don't find too much. You have to experience this to know what I'm talking about.

As our collection grew, we decided we would have to get set up and cut and polish our own stones, as it is hard to get them cut, and expensive, too.

**Equipment needed**

We got into the lapidary end of rock-hunting at this point. We found it necessary to buy a diamond saw to cut the stones and a cabbing machine to shape, grind and polish the gems.

Our two grandsons, Anthony and Scott, have got into the act, too. They enjoy the outings, then enjoy cutting and polishing their own finds.

One of the large sapphires we found at Canton weighed almost a half pound. From stones such as these we fashion rings, tie tacks and brooches and pendants.

The most fun I had was shaping a sapphire cabochon using a four-inch 200 grit diamond wheel on my cabbing machine. After fine-grinding on a 600 and 1,200 grit wheel the stone was prepolished and polished on star phenolic laps using 300; 600; 1,200; 3,000; 8,000; 14,000; and 50,000 grit diamond compound.

**'A real thrill'**

After the stone is finished and inspected, then re-inspected again, all the enjoyment can be experienced since you have found the stone at the mine, then cut it . . . it's a real thrill when the stone turns out to be so beautiful.

After cabbing for a while, we then decided that we should try faceting. When you get through the different steps of faceting and you have a good stone, this is really exciting. The light reflects the brilliancy of the stone . . . making it all worthwhile, the time and trouble you put into finding the thing in the first place, then making it into a thing of beauty.



**FAMILY AFFAIR** — Grandsons Anthony and Scott McIlwain, left to right, enjoy rock hunting and polishing almost as much as the grown-ups. "It's contagious," admits Robert L. McIlwain, "something we can all do together."



**DIAMOND TREATMENT** — Grinding a large blue sapphire, Robert L. McIlwain inspects the many facets of the pretty stone. Note the safety glasses he wears, a good habit he learned at work in Y-12's shops.

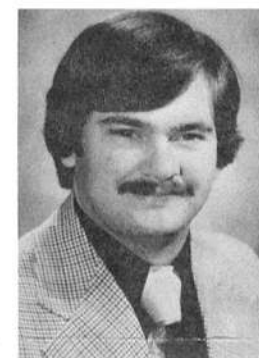
**Respirators vs. beards**

Protection afforded by respirators is of major importance at Nuclear Division installations. Under some types of normal operations and various types of emergency conditions, the correct use of the proper equipment may mean the difference between good health and safe work versus illness or injury.

Recent changes in men's hairstyles have resulted in long sideburns, mustaches and beards worn by many employees. This is a point of concern for employees who are sometimes required to use respiratory protection. Secondly, we must comply with Occupational Safety and Health Administration standards which state that "employees shall use the provided respiratory protection in accordance with instructions and training received. Respirators shall not be worn when conditions prevent a good face seal. Such conditions include a growth of beard or sideburns."

Based on these standards and the findings of studies throughout the plants, employees whose work requires them to wear respiratory protection must be clean shaven to the point where facial hair does not interfere with the sealing surfaces of their respirators.

After all, it's your health that's being protected!

**Promoted at Paducah**

Phillips

James D. Phillips has been promoted to an engineer at the Paducah Gaseous Diffusion Plant.

He joined Union Carbide in 1976, after working as a co-op student with Goodyear Tire and Rubber Co., Union City, Tenn. He received a B.S. in electrical engineering from the University of Tennessee and is a member of the Institute of Electrical and Electronic Engineers.

He and his wife, the former Marsha Arnold, live on High Street, Paducah. They have a daughter, Jeana Beth.

**Nuclear Division News**

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Member,  
INTERNATIONAL  
ASSOCIATION  
OF BUSINESS  
COMMUNICATORS

**Energy-saver:  
air-tight windows**

Storm windows must fit tightly. For frame storm windows, add some folded paper or weatherstripping to the frame. Then screw the storm windows in place to make them very tight.

For plastic storm windows, roll the plastic several times around itself at the edge, and tack or staple through the "bunching". This bunching gives a good air-tight seal all around the window.



## question box

If you have questions on company policy, write the Editor, Nuclear Division News (or telephone your question in, either to the editor, or to your plant contact). Space limitations may require some editing, but pertinent subject matter will not be omitted. Your name will not be used, and you will be given a personal answer if you so desire.

### Division name change?

**QUESTION:** In view of the increasing national awareness concerning energy-related problems and the many different approaches UCC-ND personnel are taking to help solve these problems, I think "Nuclear Division" is a misnomer. Has any consideration been given to renaming our part of Union Carbide to, say, the "Energy Division?"

**ANSWER:** This suggestion has been made before and has been considered. We have decided that, at this time, we should not change the Division's name.

For more than 30 years we have been involved in nuclear activities in response to both the defense and domestic needs of our country. Our organization has done an outstanding job in both of these areas and our employees are very proud of their contribution. Despite our interest in other energy fields, the major part of our work is still nuclear-oriented.

### Rewards for ideas?

**QUESTION:** Union Carbide routinely pays fees to consultants who do not know nearly as much as on-the-job workers, yet does not pay for cost and time-saving ideas from regular employees. General Motors and Tennessee Eastman have found this to be good business, as well as a morale builder. Why does Union Carbide not feel the same?

**ANSWER:** It is Company policy to obtain advice and/or services from persons possessing special skills or knowledge whose employment on a full-time or part-time basis is not practical or economically feasible. It is the intent that these persons be able to provide an immediate material contribution.

As you state, there are a number of large companies who have incentive plans. There are, however, diverse opinions concerning the actual value and practicality of cash award incentive plans. We feel the inherent disadvantages of cash award incentive plans outweigh the advantages.

### Patent rights

**QUESTION:** A recent court ruling said federal employees have a right to secure money for their patents. Where does this leave the status of Union Carbide employees working under ERDA contract as far as their patent rights are concerned?

**ANSWER:** Patent rights of Union Carbide employees relative to inventions made as a result of their employment with the Nuclear Division are determined by their contract of employment. As a condition of employment, Nuclear Division employees assign rights to all such inventions to the government. The court decision, referenced in your question, appears

to be the case of **Kaplan v. Johnson**. We are advised that the decision in this particular case applies only to certain employees of the Federal Government. This decision is not applicable to Union Carbide, Nuclear Division employees.

### Survey follow-up

**QUESTION:** The last Nuclear Division attitude survey uncovered serious deficiencies with respect to employee identification with Union Carbide Corporation. Much has been done to rectify the situation such as the issue of employee ID cards, tightening up the management system, and even working on our logo. Personally, I identify with the Company in a much different way than I did previously as the result of some of these efforts. Does the Company plan a follow-up attitude survey to assess the impact of these changes?

**ANSWER:** We are always pleased to hear from employees who recognize that we have been responsive to the attitude survey. While you specifically refer to "identification with the Company," there has been a continuing follow up to assure that recommendations of the many task forces have been implemented, where practical.

While another survey at some point in time would be desirable, there is no plan to have one in the near future.

### Female laborers at ORNL

**QUESTION:** Why doesn't ORNL hire female laborers? Both Y-12 and the ORGDP do, but not ORNL.

**ANSWER:** ORNL, as well as the Y-12 Plant and ORGDP, hire female laborers and expect to continue to do so in increasing numbers.

### Shift discrimination?

**QUESTION:** I was recently informed by my supervisor that I was being put on the second shift . . . another person was not because she had a family. Is this a rather subtle type of discrimination against the EEO policies?

**ANSWER:** Your question does not indicate whether you are an hourly or salaried employee. All Nuclear Division hourly employees are subject to shift assignment under the provisions of their respective Collective Bargaining Agreements. These agreements do not give recognition to a particular individual's family situation, but merely rely upon the individual's qualifications and seniority standing.

There are no formal seniority provisions which affect our salaried community, although some shift organizations may use company service ranking as a guideline to shift assignments. It is the Company's policy to make shift assignments by

(Please see page 8)

## Six promotions told at Y-12

Six promotions have been announced at the Y-12 Plant. William L. Coggins Jr. has been made a machining supervisor in Fabrication; Willie L. Duke a senior engineer assistant in Product Certification; James F. Kelley, a foreman in Metal Fabrication; Lloyd G. Porter Jr., an engineer in Product Engineering and Scheduling; Donnie R. Satterfield, a planner-estimator in Fabrication; and Joseph R. Ryan Jr., an inspection engineer in Product Certification.

Coggins, a native of Knoxville, joined Union Carbide 14 years ago. Previously, he was with Precision Engineering and J.I. Case Co.

Married to the former Myra Smith, he lives at Route 4, Valley Lane, Clinton. He has three children, Steve, Andy and Missy.

Duke, a native of Detroit, attended Area State Vocational Technical School, and worked with the Ross Tool and Gear Co. in Lebanon before joining Union Carbide in 1968.

He is married to the former Linda Ellison, and they live at 4701 Sully Circle, Knoxville, with their two children, Shannon and Melody.

Kelley, a native of Griffin, Ga., has been with Union Carbide since 1970. He was employed by Reeder Chevrolet before then.

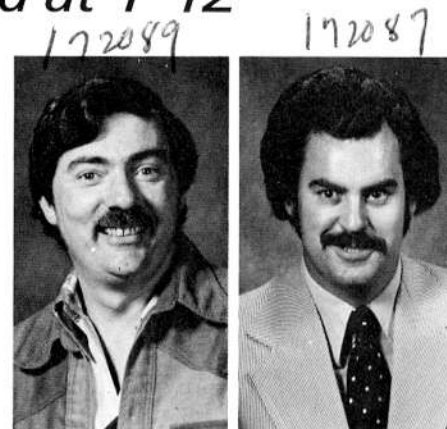
Married to the former Luella Ray, he lives at 1910 Connecticut Avenue, Knoxville. The Kelleys have four children, Christine, Victoria, Jamesana and James Jr.

Porter, a native of Blytheville, Ark., joined Union Carbide last year, after graduating from the University of Tennessee. He served four years in the U.S. Navy.

Porter lives at 205 Cavetton Road, Knoxville.

Satterfield, who was born in Blount County, joined Union Carbide in 1969.

He and his wife, the former Bertha Pate, live at 7244 Evanel Way, Powell, with their son, Gregory.



Coggins

Duke



Kelley

Porter



Ryan

Satterfield

Ryan, a native of Sylva, N.C., served in the U.S. Navy, and was employed by Solar Aircraft and General Dynamics Corp. before joining Union Carbide 20 years ago. He has attended U.T. and the Tennessee State Vocational School.

He is married to the former Louise Sprinkle. They live with their three children, Mike, Margaret and Joseph III, at 104 Nolan Road, Oak Ridge.

## anniversaries

### Y-12 PLANT

#### 25 YEARS

Martin L. Gardiner, Bobby F. Rutherford, Conley B. Stooksbury, William I. Galyon and Harvey F. Coppock.

#### 20 YEARS

John W. Ruthven.

## safe thinking . . .

**ICE CREAM BANDAGE** — A small boy licking a two-scoop ice cream cone accidentally touched the hot metal of a barbecue grill. At the first shock of pain, he plunged his burned finger into the ice cream.

The youngster got instant relief. Score one for ice cream as first-aid equipment.

## Easy come, easy grow.



Take stock in America.  
Buy U.S. Savings Bonds.



*Likes her job***Parcel courier at ORNL**

Doris K. Moore of the Plant and Equipment Division is one of two parcel couriers at ORNL. She likes her job delivering supplies, parcel post and third-class mail within the Laboratory. "It gives me a chance to get outside and exercise," she says.

Her typical day starts at the Receiving Office, where she sorts the packages and supplies, then loads them into the large gray mail van.

Moore makes two rounds in the morning and two in the afternoon. "The number of stops I make per round varies depending on the destination of my deliveries," she says. On an average run, Moore makes 20 stops, 10 of which are regular buildings on her route.

At each building, she goes to the double-drawer in-and-out box and picks up any out-going packages, leaving behind the ones to be delivered. "Some buildings give me more of a workout because they have several mail drops to check."

Instead of an area for passengers, the back of Moore's van is walled with metal shelves—a regular "mail room on wheels." The parcels are shelved according to building destination, with the bulkier items stacked on the van floor.

The mail van is not the only vehicle Moore has driven. Like many drivers in P&E, Moore is versatile and can drive almost any truck in the Division.

Moore has been at Union Carbide since 1966, and has worked in her present position for more than a year. Before her job as P&E parcel courier, she worked at the ORNL cafeteria. She and her husband, Thomas, a guard at the Laboratory, live in Loudon.

Another parcel courier is Roy E. Braden, who works out of Transportation. Braden makes five trips a day to the Oak Ridge Post Office picking up Nuclear Division mail.



**MAIL ROOM ON WHEELS** — Doris K. Moore, parcel courier at ORNL, sorts packages according to building and puts them on the metal shelves that line the walls of her van. Look closely, and you can see the windshield wipers at the back of her "mail room."

**retirements**

**Coy O. Easley**  
Paducah  
Guard Department  
25 years service



**Ollie Woods**  
Paducah  
Transportation  
24 years service



**James T. Davis**  
Paducah  
Fire Department  
26 years service



**Thomas H. Ausenbaugh**  
Paducah  
Fabrication Shops  
26 years service



**Hugh R. Hodsden**  
ORGDP Fabrication and  
Maintenance  
33 years service



**George S. Petit**  
ORGDP Technical  
Services  
25 years service



**Lucille J. George**  
Y-12 Building Services  
32 years service



**Lemuel P. Edwards**  
ORGDP Operations  
32 years service



**John W. Hughey**  
Paducah Plant Protection  
34 years service



**William E. Spraker**  
Y-12 Chemical Services  
29 years service



**Floyd G. Banks**  
Laboratory Protection  
ORNL  
31 years service



**Gene T. Conner**  
Laboratory Protection  
ORNL  
30 years service

**anniversaries****PADUCAH****25 YEARS**

Hester Albritton Jr., Joseph W. Simons and Harmon C. Spear.

**20 YEARS**

John S. Thurman.

**ORNL****30 YEARS**

George B. Dinsmore, Chemical Technology Division; James W. Dennis, Operations Division; Edward M. King, Operations Division; Ray F. Benson, Engineering Technology Division; Charles A. Gifford, Engineering Technology Division; Vernon O. Maggart Jr., Plant and Equipment Division; and James A. Cain, Plant and Equipment Division.

Floyd M. Glass, Instrumentation and Controls Division; Johnnie H. Cline, Operations Division; William S. Lyon Jr., Analytical Chemistry Division; Charles R. Guinn, Health Physics Division; John A. Burkhalter, Plant and Equipment Division; Graydon D. Whitman, Engineering Technology; Nathaniel H. Land, Biology Division; Earl S. Sproles, Operations Division; and Frank N. Browder, Chemical Technology Division.

**25 YEARS**

Robert M. Beckers, John R. Parrott, Henry Inouye, Little Copeland, Maurice D. Allen, Robert A. Weeks and Homer G. Baker.

Nathan B. Carr Jr., Paul E. Woods, Jim C. Guinn, Donald T. Dice, Raymond Eskridge Jr., Glenn E. Davis, Roy E. Hicks, Jack D. Richardson, Billy D. Martin, Andrew H. Matthews, Gene R. Hicks, Loyd R. Gitgood, Jack A. Powers, Oscar J. Harmon and Glenn A. Bowden.

**20 YEARS**

William R. Mixon, Herbert E. McCoy Jr., and Marcelle P. Ruszkowski.

Robert S. Holcomb and C. D. Cooper.

**ORGDP****30 YEARS**

Burley Jones, Janitors' Department; Lynn H. Bell, Shop Services Department; and William F. Barger, Materials and Systems Development.

**25 YEARS**

James L. Fritts, Robert V. Adkins, Henry F. King, Joseph M. Wolfe, Bruce L. Loflen, Edgar F. Poe Jr., Grace M. Usry, J. R. Altum, John K. Keith, Herman M. Jackson, Howard M. Finch Jr. and Tarzan K. Hawkins.

**20 YEARS**

Herbert F. Higdon.

**safety scoreboard**

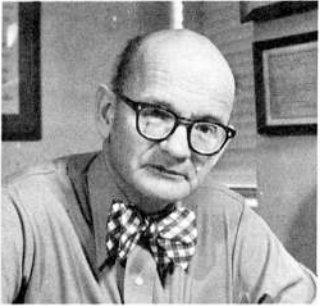
Time worked without a lost-time accident through March 10:

Paducah	22 Days	118,000 Man-Hours
ORGDP	66 Days	2,095,530 Man-Hours
Y-12 Plant	23 Days	672,000 Man-Hours
ORNL	175 Days	3,554,181 Man-Hours



**K-25 CREDIT UNION OFFICIALS**—The K-25 Credit Union shows its 1977 officials, shortly after their annual meeting held recently. In the front row, from left, are: W.G. Schawab, supervisory committee; G.E. Bullock, credit committee; V.R. McNeely, supervisory committee; C.E. Goodman and V.O. Maggart, directors; and H.G. Gunter, credit committee. In the back row are: J.M. Shumpert and B.M. Kelly, directors; M.N. Strickland, credit committee; E.S. Thompson and E.G. Cole, directors. D.R. Carter, director, was not present. Reports of the committees were given at the January 28 meeting, and a six percent dividend was declared. There was a large crowd, despite the weather.





## Fitness update celebrates Boston Marathon

by T. A. Lincoln, M.D.

*(Editor's Note: Dr. Lincoln alternates his regular column with "The Medicine Chest," where he answers questions from employees concerning health in general. Questions are handled in strict confidence, as they are handled in our Question Box. Just address your question to "Medicine Chest," NUCLEAR DIVISION NEWS, Building 9704-2, Stop 20, Y-12, or call the news editor in your plant, and give him or her your question on the telephone.)*

In Boston on April 18, about 2,000 men and women will participate in one of the most prestigious marathons in the world. Begun in 1897, this race of 26 miles and 385 yards will test each runner's ability to fight exhaustion and pain just for the exhilaration of crossing the finish line.

To celebrate this event, a collection of new findings and opinions on the value of physical fitness seems appropriate. Because of the bias of this writer, the principal emphasis will be placed on running, with statements applying equally well to other forms of exercise.

### Facts on fitness

- The New York Academy of Sciences recently sponsored a "Conference on the Marathon: Physiological, Medical, Epidemiological and Psychological Studies," which was attended by 500 participants; 67 scientific papers were presented. Proponents of running are no longer just prejudiced enthusiasts: they have the solid support of hundreds of soundly based scientific studies.

- The New York Academy of Sciences adopted the following resolution (in part) regarding women runners: "There exists no persuasive scientific or medical evidence, nor has any evidence been presented at this conference, that long distance running, in particular marathon running, is in any way contradicted for the trained female athlete."

- Dr. George Sheehan, a cardiologist in Red Bank, N.J., a distance runner and a frequent author of sports articles, wrote in the January 30 **New York Times** that the most dangerous sport of all is sitting and watching. Physiologists have documented abundantly the hazards of inactivity. He says only those who can pass the most rigorous physical examination can safely follow the sedentary life. "From the moment you become a spectator, everything is downhill."

- An extensive review of over 100 published articles on the effects of training and disease on connective tissue has concluded that exercise is necessary to maintain health. Physical training strengthens bones, ligaments and tendons, making them less susceptible to injury.

Training or conditioning, if properly performed, should not cause significant wear on joints. Contact sports, or those which involve sudden stops or twists, can subject normal or worn joints to unreasonable stress and thereby cause injuries. The

advantage of jogging is that participants set their own pace, depending on their own particular strengths or weaknesses, and injuries and pathological wear and tear are usually avoided.

- "Jogging Can Kill You," an article by Dr. J. E. Schmidt, which appeared in the March 1975 **Playboy**, caused much anxiety in many joggers. It is true that a jogger rarely will die from a heart attack following running. In such a case he (or she) was already a candidate for the fatal attack; and jogging, if it had been done sensibly, probably delayed the tragic terminal event. The claims that jogging causes intervertebral discs to rupture, sacroiliac joints to "loosen," veins to develop phlebitis, and female uteri and breasts to sag prematurely, are pure poppycock!

- Safety directors, who are now preoccupied with reducing off-the-job injuries, need to encourage reasonable physical fitness programs, not flail at athletic endeavors because they occasionally cause sprains and fractures. The fit individual is much less liable to injury than the unconditioned "weekend" athlete.

- A 10-year longitudinal study of the effect of vigorous physical activity on a group of 16 men (with a comparable control group who did not exercise) showed that the 9 to 15 percent decline in physical work capacity, which occurs during the ages of 45 to 55, can be forestalled by regular endurance exercises.

### Jogging program

- The physiological benefits of a jogging program in which the heart rate is maintained at least at 70 percent of predicted maximum heart rate for a given age (125 beats per minute at age 50, 135 for age 30) for about 30 to 45 minutes, three to four times a week, have been established by many studies.

Health benefits of a regular jogging program include the following: a lowered resting and exercising heart rate for the same work; an increase in cardiac output and blood volume; an increased oxygen intake; a better mechanism for contracting oxygen debt and more rapid oxygen debt repayment; a reduction of diastolic blood pressure; a reduction in serum cholesterol and triglyceride levels; a depletion of body fat; and an increase in lean body weight.

- The psychological benefits of

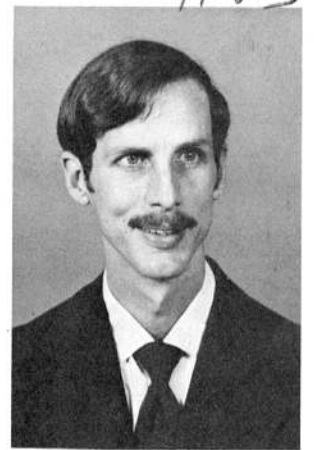
## Named supervisors at ORGDP



Humphrys



Knox



Reynolds

Three promotions have been announced at the ORGDP. W. Terry Humphrys has been named a materials supervisor in Finance, Materials and Services; Charles D. Knox and Richard M. Reynolds are new maintenance supervisors in Fabrication and Maintenance.

Humphrys, a native of Cleveland, attended Tennessee Technological University before joining Union Carbide in 1974.

He lives at 146 Tacoma Road, Oak Ridge.

Knox, who was born in Niota, has a B.S. in industrial education from the University of Tennessee, and has done additional graduate work there. He was a technical assistant and an instructor in the TAT Project at Y-12, and worked in ORNL before transferring to ORGDP in 1975.

He is married to the former Martha Cuthbert, and they have two sons, Shon and John. They live at Route 1, White Wing Road, Lenoir City.

Reynolds, a native of Knoxville, attended Tennessee Wesleyan College and UT before joining Union Carbide more than a year ago. He is also a veteran of the U.S. Air Force.

Mrs. Reynolds is the former Marie Dozier, and they live at Route 1, Harriman, with their two children, Michael and William.

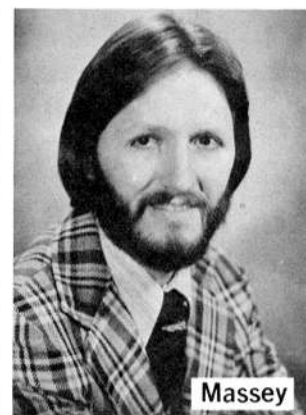
### next issue...

The next issue will be dated March 31. The deadline is March 23.

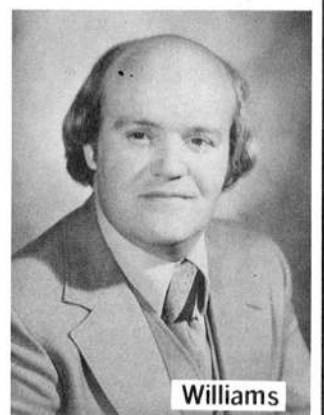
## Paducah adds certified engineers



Green



Massey



Williams

Three additional Union Carbide engineers at the Paducah Plant have been certified as professional engineers. They are Richard A. Green, Jimmy C. Massey and Ronald K. Williams.

regular physical exercise are great but difficult to measure. Increased stress tolerance, reduction in tension, improved motivation for all life activities and a sense of well-being are frequently mentioned.

- A study done by the Arizona State University's Bureau of Business and Economic Research revealed that workers who qualify as low coronary risks tend to be more productive, absent less often and have higher job satisfaction.

- General Motors now spends \$850 million a year for its employee health plan — more than it spends on purchases from U.S. Steel, its principal supplier. Health benefits last year added \$175 to the cost of every car and truck they manufactured.

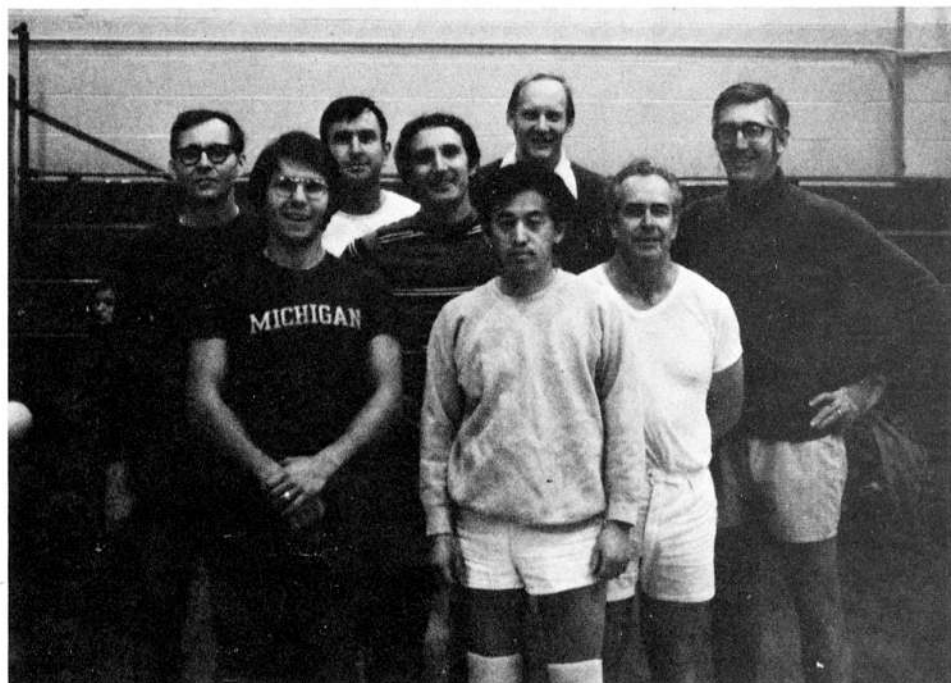


## Take stock in America.

200 years at the same location.



## recreationotes



**HIGH VOLLEYS** — The Rad-Fiz team, a league-leading contender in the Nuclear League, is seen above. From left are Bob Compton, Phil Maziasz, Jim Gibson, Ray Garrett, M. H. Yoo, Bob Stokstad, Wayne Clark and Joe McGrory. Not pictured were Tim Reiley, Ray Carpenter and Scott Aaron.

### Volleyball leagues ...

The Radd-Fizz team holds the spotlight in the Nuclear League, the Taxi Squad in the Atomic League and the Gauss House Gang holds tight reins over the Carbon League, as volleyball soon winds down.

League standings follow:

NUCLEAR LEAGUE		
TEAM	W	L
Radd-Fizz	39	12
Blue Team	36	12
The Skinks	38	13
Over-The-Hill-Gang	38	13
Pogo's	34	14
Maxwell Demons	26	25
Artie's Army	27	27
Ball Busters	21	30
C-Shift Reds	15	36
The Abends	12	39
The Kilos	9	39
Fed's	8	43

ATOMIC LEAGUE		
Taxi Squad	42	9
Diggers No. 2	39	12
Diggers No. 1	36	15
Quarks	17	34
Ecomen	13	38
Old Men	6	45

CARBON LEAGUE		
Gauss House Gang	34	8
Volares	26	13
Group	20	19
Half A Chance	13	26
Killer Bees	6	33

### Summer golf league ...

The 1977 summer Y-12 Golf League, held on Thursdays at South Hills Golf Course, is getting underway. Each team will consist of two players and one alternate. Interested parties should contact the Recreation Office, extension 3-5833, or George Cozart, 3-5081.

### Other golf leagues ...

The summer golf leagues are beginning to organize for 1977. The Dead Horse Lake League plays on Tuesdays; the South West Point League on Mondays. The deadline for signing up is April 14. A member of each team should contact Recreation, extension 3-5833, before April 14.

### ORNL bowling ...

The Bowling Aces, fresh from their All Carbide tournament win, still lead the ORNL Ladies League by three points, above the Mousechasers. Mearl Smith's recent 611 handicap series topped the field.

The Ten Pins lead the A League still, miles ahead of the Zots. Dick Pawel's 657 series was rolling high for the night early in March.

The Knuckleheads hold a slight advantage in the C League, a breath ahead of the Alley Rads. Their Moneyhun rolled a 652 series late in February.

### ORGDP bowling ...

The Payoffs hold a 20-point lead in the ORGDP Women's League as the second half rolls well into its way. Louise Boone rolled games of 179, 268 and 223 for a total 670 series recently.

The Mishaps move into first standings in the Tuesday League. The All Steers still hold high series ... with a 3108 to their credit. S. A. Levin's recent 242/285 game led bowlers down the lane, of course.

The Hi-Rollers roll into first place in the Wednesday League. Larry Woods' 699 series still holds high, and his 277 single is still high.

### Park opening set ...

The Clark Center Recreation Park will open for spring business, Friday, April 1. The nature trails, picnic areas, boat launching facilities, and all the rest will be in business for the summer. Sorry, no swimming until lifeguards come on duty in early June. (The water of Melton Hill Lake is still too cold, anyway!)

### Skeet league ...

Y-12's Alan Van Hull scored a perfect 50.000 to take February skeet highs. Bill Weathersby, ORNL, closed into second place with a 49.482; and Carl Brewster, Y-12, captured third place with 47.846.

### Paducah fishing contest ...

To celebrate the welcomed warm weather, fishing enthusiasts in the Paducah Plant are limbering up their wrists for the current casting season. The official starting date for the various contests was March 1.

The total competition runs for the individual species categories for the next 235 fishing days. Dates for the various categories are: Crappie - March 1 through April 15; Bass - March 1 through April 15; Crappie - April 16 through May 30; Bass - April 16 through May 30; Spoonbill - May 1 through June 30; Bream - May 15 through June 30; Catfish - July 1 through July 31; other game fish - June 15 through August 31.

Entry forms for fish measurement and weight can be obtained throughout the plant or in the Recreation Office. Specific prizes for Carbide's champion fishermen will be announced by the plant's fishing committee.

Gear all assembled? Let's go fishing!

### Y-12 bowling ...

The Playboys climb back atop the lead in the Classic League, one ahead of the Cubs. David Foster's 610/700 series is the new season's highs, and Ray Winnie 252/278 single still holds.

The Sunflowers are one point leaders over the Mini-Strikes in the C League, as Bob Carmack's 711 series is still high ... and Gerald Doyle's single of 267 holds.

The Hits & Misses cling to a one-point lead in the Y-12 Mixed League, over the Friskies. Bill Hackett's 559/634 series was high recently ... and Al Adams rolled a 481/595 series. The League named new officers for next year: Bill Jago, president; John Casillo and Dave Mosley, vice presidents; and Bonnie Albright, secretary-treasurer.

### All Carbide bowling ...

The Quetzecuatles (which must share honors for the most unique name in all of sports) take a one-point lead in the Carbide Family Mixed League early in March. Rolando Long and Tillie Plaza were recent stars, rolling series of 541 and 544.

## wanted



### ORGDP

COMMUTER POOL van riders wanted from Cumberland Estates area, Knoxville, to any portal, straight day. Steve Shipley, plant phone 3-6661, home phone Knoxville 588-8660.

RIDE from Harriman to Portal 2 or 3, straight day. Call extension 3-3053, or Harriman 882-2831.

CAR POOL members from Norwood, Fountain City areas, Knoxville, to Portals 4 and 7, 8 a.m. to 4:30 p.m. shift. Wayne Neff, plant phone 3-9616, home phone Knoxville 689-5350.

### Y-12 PLANT

RIDE (for four) or will join car pool from West Broadway, Lenoir City, to Biology Portal, straight day. Shirley Ogle, plant phone 3-5504, home phone Lenoir City 986-7812.

RIDE from Atlantic Avenue, or North Central, Knoxville, to North or Central Portal, straight day. Mark Wilson, plant phone 3-5988, home phone Knoxville 693-0034.

### ORNL

VAN POOL MEMBERS from West Knoxville, Walker Springs or Cedar Bluff area, 8:15-4:45 shift, any portal. C. W. Greene, plant phone 3-1526, home phone 693-3444.

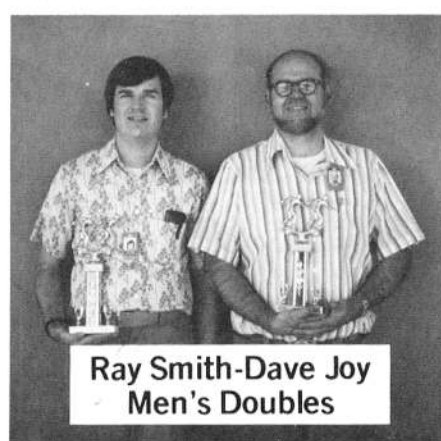
VAN POOL RIDERS from West Knoxville, I-40, Papermill Road exit area, 8:15 to 4:45. R.L. Pearson, plant phone 3-1875, home phone 588-9949.

RIDERS for van pool from Beaver Creek Drive, Karns, Solway area, to any portal, 8 a.m. to 4:30 p.m. Gary Wright, plant phone 3-6441, home phone Knoxville 947-0241.

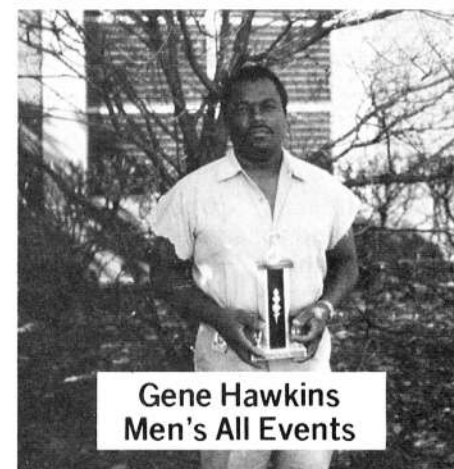
RIDE from Forest Park Boulevard, Bearden area, to West Portal. Alice Montgomery, plant phone 3-1257.



**Martha Britt**  
Women's Doubles



**Ray Smith-Dave Joy**  
Men's Doubles



**Gene Hawkins**  
Men's All Events



## Ray Smith, Ruby O'Kain top Carbide bowlers

Ray Smith and Ruby O'Kain swept top honors in the recently completed All Carbide Bowling Tournament. Smith's 1811 all events scratch score was high; O'Kain's 1698 was high for the women's scoring.

Taking handicap honors were Gene Hawkins, 2018; and Elizabeth Phipps, 1865.

An entry from the ORNL A League, the Limits, seized first place in Men's Team Events . . . with a 2904 score. The Limits are comprised of John Cobb, Paul Gnad, Bill Montgomery, Reg McCulloch and Ken Thomas. Taking handicap honors were two Y-12 C entries, the Mini-Strikes and the Fill Ins . . . the Mini-Strikes scoring a total of 3162, while the Fill Ins scored 3161. The Mini-Strikes, Dave Lanham, John Patton, Norm Shamblin, Ray Smith and Harold Zang, came within 10 pins of winning both scratch and handicap honors, being nosed out by the Limits.

### Women team tops

Women's team honors went to the Uptowners, from ORGDP, with a 2436 scratch tally. They are comprised of Myrtle Cowan, Mary Foley, Elaine Griffies, Maxine Gunter and Ruby O'Kain. The Bowling Aces, from ORNL, made up of Jan Bangham, Carolyn Gooch, Mary Long, Charlene Webster and White Gaither, took high handicap scores with a 2979. They were followed by the Purchaseettes, the Payoffs and the Avengers.

Jennie Jackson took scratch and handicap honors in women's singles, posting a 553/658 score. Martha Britt placed second with 655; and Jeri Kobisk took third place with 644.

### Women's doubles

Jane Higdon and Martha Britt took women's doubles, rolling a 1292 handicap combination. They were followed by Stephanie Livesey-Sue Davis, 1225; Delores Koons-Jo Hitch and Anne Keesee-Mary Ellen Smith, each totaling 1224.

In men's singles, it was Wayne Groppe all the way, rolling a series of 678 scratch, 726 handicap. He was



Jenni Jackson  
Women's Singles

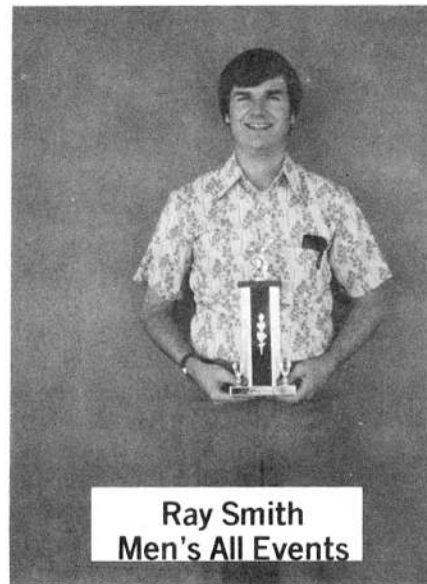
followed by Jerry Moore, 720; Eugene Hawkins, 710; and Gordon Hill, 701.

In men's doubles, it was Ray Smith and David Joy, enjoying total scratch scores of 1208. John Seivers and Calvin Edwards placed high in handicap tally with 1307. Ken Valentine and Frank Adams edged into second place, only one under, with a 1306. Earl Severs and Howard Crane placed third with 1286.

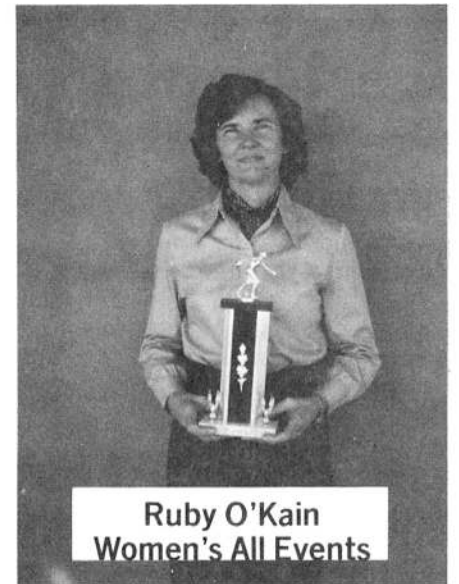
### Mixed doubles

Norm Teasley and Mary Goldberg swept mixed doubles, rolling a 1158 scratch total. Their 1281 was high in handicap scoring also, followed by Nell Jago-Harold Zang, 1257; and Sonja Gro and J.C. Grove, with 1247.

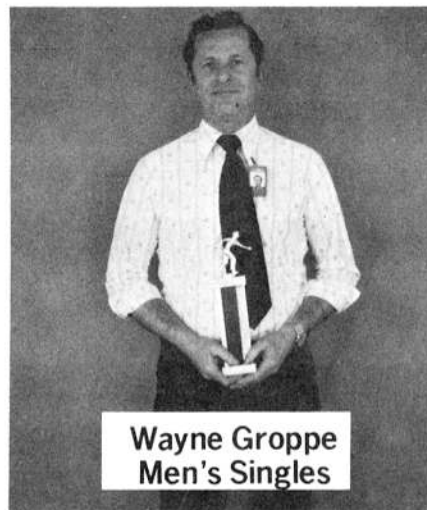
The three weekends-in-February tournament required the skills of many volunteers who kept scores, managed the score checking and kept things moving in general. Special plaudits to Bob Crowe, tournament director, and Mabel Tyer, office manager, also to Dave Joy and Maxine Gunter, who lent helping hands. And a very special salute to Mike Brown, from the Y-12 Mixed League, who was there to keep scores for every session, missing only one when he substituted for a missing bowler!



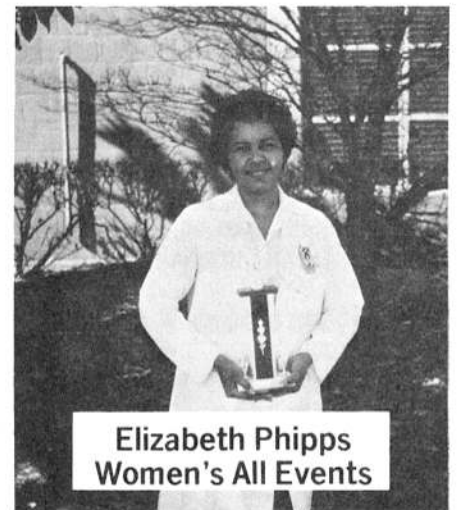
Ray Smith  
Men's All Events



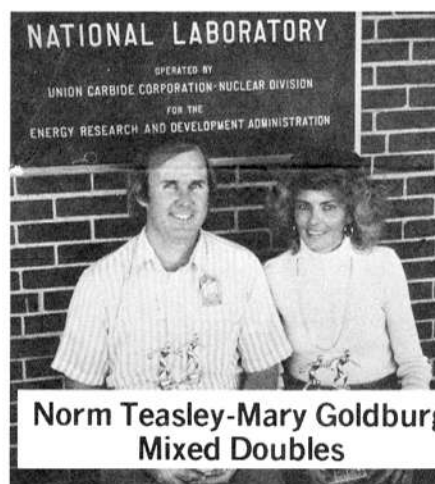
Ruby O'Kain  
Women's All Events



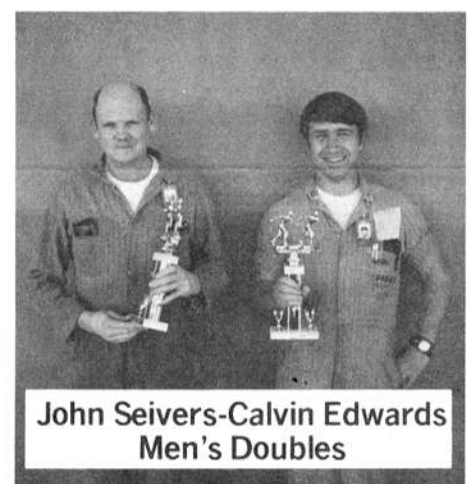
Wayne Groppe  
Men's Singles



Elizabeth Phipps  
Women's All Events



Norm Teasley-Mary Goldberg  
Mixed Doubles



John Seivers-Calvin Edwards  
Men's Doubles



**TOP WOMEN'S TEAM**—The Bowling Aces, from ORNL Ladies League, topped team bowling in the recent All Carbide Bowling Tournament. From left are Charlene Webster, Mary Long, White Gaither, Carolyn Gooch and Jean Bangham.



**TOP TEAM**—The Limits, from ORNL's A League, took top team honors in the recent All Carbide Bowling Tournament. From left are John Coobs, Reg McCulloch, Bill Montgomery, Ken Thomas and Paul Gnad. The team rolled a 2904 scratch score to seize highs for all men's entries.



## question box

(Continued from page 3)

using only job-related criteria (ability to perform the necessary work, experience, work background, etc.).

If you think you were assigned to a less desirable shift for non-job-related reasons, you should discuss this matter with your supervisor and/or your affirmative action coordinator.

### Y-12 mail service

**QUESTION:** Is there any reason for the decline in service of the Y-12 reproduction and mail services? Others have asked, too, why service has declined in these two vital service departments.

**ANSWER:** Except for short-term problems related to absenteeism and inexperienced relief, Y-12 management indicates it is not aware that there has been any decline in the service of the Y-12 reproduction and mail service. Plant customers who are having difficulty should discuss any problems with Earl Goode at telephone 3-7040.

### Job bid listings

**QUESTION:** Why are job opportunity system bids not posted at the different buildings at Y-12? They are posted in every department at ORGDP.

**ANSWER:** Over the years, bulletin board practices have differed in these locations. ORGDP has approximately 50 official bulletin boards located at strategic points throughout the installation. Y-12, on the other hand, has official bulletin boards only at the eight entrance portals.

ORGDP posts job opportunity bids on approximately 100 divisional bulletin boards throughout the installation. Y-12 posts job opportunity bids only on the eight official boards and feels that, due to their longstanding use of the portal bulletin boards for all official announcements, this practice best serves the employees involved.

If a Y-12 employee does not agree with this conclusion, he/she should call James M. Seivers, Employment Department, extension 3-5241. Seivers is responsible for the job opportunity system there. Manageable alternatives can be considered.

### Flu vaccine availability

**QUESTION:** When I took my swine flu vaccination recently, the Y-12 Plant medical department stated that regular flu shots would not be available in the future. Why is this vaccine no longer available?

**ANSWER:** The statement was either wrong or misinterpreted. "Regular" means the type "A" Victoria strain — the strain that was felt to be the one most likely to cause an epidemic before the swine type got this distinction. Most all of the available flu vaccine in 1976, which was provided by the U.S. Public Health Service, was the monovalent swine flu type, and this was the one most people received. A limited amount of bivalent (swine plus "regular") flu vaccine was also provided; this was given primarily to high-risk and older persons.

Unless there is some unforeseen complication, we anticipate the "regular" flu vaccine will be available in our Health Centers again this coming fall and winter.

## Cold weather

(Continued from page 1)

embargoed by Consolidated Rail. The severe blizzard in upstate New York Friday, January 28 stranded employees overnight and shut down plants at Tonawanda and Niagara Falls for several days. At the Linde plant in Tonawanda, several hundred people were stranded Friday night and into Saturday. Operations were not resumed until February 3. Approximately 350 employees also were stranded Friday night and well into Saturday at the Niagara Falls Metals plant which did not resume operations until Wednesday, February 2. The Niagara Falls Carbon Products plant shut down operations Friday afternoon and did not reopen until Tuesday afternoon February 1. The employees spent Friday night at the plant. While the Ohio River was open to limited navigation, all movement on the upper Mississippi and Ohio Rivers was at a standstill. River conditions, however, have improved, although traffic has not yet returned to normal. Transit times on the Ohio River are generally three days longer than normal. The Illinois River has opened but continues to have severe ice problems. Although vessels are moving, transit times are generally four days longer than normal.

Chairman William S. Sneath told a group of security analysts at a meeting in Atlanta February 16, that although there has been some increase in transportation costs and some temporary plant shutdowns, the severe winter weather has not materially affected the Corporation and should have no major impact on earnings unless the cold snap is prolonged.

## safe thinking ...

**RAZOR STORAGE** — A block of plastic foam is a good place for do-it-yourselfers and hobbyists to store single-edge razor blades safely. Just stick the sharp edge in the plastic.

*Editor's Note — Don't be selfish with your safety tips! Call the Nuclear Division News Office, and tell us your stories or hints on safety.*

## division death

Carolyn M. Sexton, a secretary in the Health Physics Division at ORNL, died February 27 at her home, 129 Goucher Circle in Oak Ridge. A native of Johnson City, she joined Union Carbide in 1964.

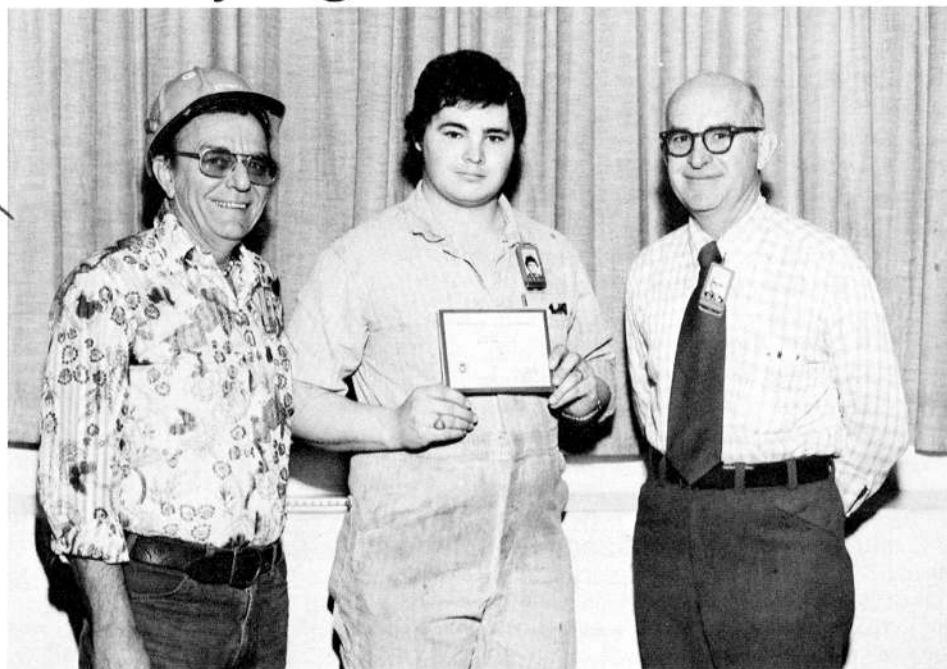


Mrs. Sexton

Survivors include her husband, Dr. David H. Sexton of ORNL's Health Division; mother and stepfather, Mr. and Mrs. Charles Latimer; a sister, Mrs. Marilyn Rust; a brother and sister-in-law, Sgt. Thomas E. and Joan Prewett Miller; a stepsister, Gail Miller; and six nephews.

Funeral services were held at First United Presbyterian Church with burial in Oak Ridge Memorial Park.

## Use of safety glasses probably saved eyesight for Paducah man



**WISE OWL NOW**—Robert M. Williford, center, accepts membership in the Wise Owl Club of America from William F. Thomas. The organization recognizes employees and industries who successfully prevent serious eye injury with the use of the proper optical safety equipment. At Williford's left is assistant general foreman Solon T. Williams.

Robert M. Williford Jr., PGDP, has been awarded membership in the Wise Owl Club of America, an organization of industrial workers and students who escape eye damage and blindness through use of industrial safety eyewear. The National Society for the Prevention of Blindness, Inc. sponsors the Wise Owl safety incentive program.

Conscientious use of safety eyewear by Williford saved his sight recently when a wrench he was using disengaged itself and struck his left eye, which was protected by safety eyeglasses. Only minor injury ensued from the shattering of the protective lens.

The membership process involves submitting a record of the accident to the club which determines the acceptability of the application. Only those incidents representing the possibility of serious injury are selected.

As of February, 1977, the Wise Owl Club program has enrolled more than 61,550 members from chapters within the United States. The club mem-

## patents granted ...

To Howard L. Gerth, William B. Ditt, Robert M. Pardue and Charles E. Knight Jr., all of the Y-12 Plant, for "Filament Wound Structure and Method."

To Donald E. Horner, James C. Mailen and Franz A. Posey, all of ORNL, for "Electrolytic Trapping of Iodine from Process Gas Streams."

To Carlos E. Bamberger and Donald M. Richardson, both of ORNL, for "Thermochemical Process for the Production of Hydrogen Using Chromium and Barium Compound."

To A. Donald Kelmers, Melvin R. Bennett and Carlos E. Bamberger, all of ORNL, for "Method for Converting UF<sub>5</sub> to UF<sub>4</sub> in a Molten Fluoride Salt."

bership roster also represents incalculable savings in eyesight and more than \$307 million in workmen's compensation.



**UNION CARBIDE CORPORATION**  
NUCLEAR DIVISION  
P. O. BOX Y, OAK RIDGE, TENNESSEE 37830

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